

Claims

1. A process for producing an electrode which comprises forming an electrode precursor comprising a layer 5 comprising an intercalation material, and then applying stabilised lithium metal particles to the surface of the electrode precursor.

2. A process according to claim 1 wherein the particles 10 are applied to the anode.

3. A process according to any one of the preceding claims wherein the particles are suspended in a liquid for application to the electrode precursor.

15 4. A process according to claim 1 or 2 wherein the particles are formed into a slurry or suspension and dispersed over the electrode precursor.

20 5. A process according to claim 1 or 2 wherein the particles are applied by electrostatic transfer.

25 6. A process according to any one of the preceding claims wherein the particles are fixed to the electrode surface by rolling.

7. A process according to any one of the preceding claims wherein the stabilised lithium metal particles are mixed with carbon particles.

30 8. A process according to any one of the preceding claims wherein the electrode precursor is a composite electrode precursor comprising an active material and a binder, and prepared using a solvent for the binder.

- 14 -

9. A process according to claim 10 wherein the active material is carbon.

10. A process according to claim 10 or 11 wherein the  
5 binder is polyvinylidene fluoride (PVdF).

11. A process according to any of claims 8 to 10 wherein the process for producing the electrode precursor comprises the steps of

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i) mixing the active material, binder and solvent together to achieve a uniform mix

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ii) coating the mixture onto a thin copper foil,  
with controlled evaporation of the solvent

iii) drying the electrode

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iv) calendaring the electrode, and

v) vacuum drying the electrode,  
before applying the stabilised lithium metal powder to  
the electrode precursor.

25 12. An electrode comprising an intercalation material  
and a surface coating of stabilised lithium metal  
particles.

30 13. A process for producing a separator for use in a  
cell comprising an intercalation material which process  
comprises forming a separator precursor and applying  
stabilised lithium metal particles to the surface of the  
separator precursor.

35 14. A process according to claim 13 wherein the

- 15 -

particles are suspended in a liquid for application to the separator precursor.

15. A process according to claim 13 wherein the  
5 particles are formed into a slurry or suspension and dispersed over the separator precursor.

16. A process according to claim 13 wherein the particles are applied by electrostatic transfer.

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17. A separator for use in a cell comprising an intercalation material which separator comprises a separator precursor and a surface coating of stabilised lithium metal particles.

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18. A cell comprising an electrode produced according to any one of claims 1 to 11.

19. A cell comprising an electrode according to claim  
20 12.

20. A cell comprising a separator produced according to any one of claims 13 to 16.

25 21. A cell comprising a separator according to claim 17.

22. A battery comprising one or more cells according to any one of claims 18 to 21.